



Millennial scale geomagnetic field behaviour: insights from new Holocene field reconstructions

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Global geomagnetic field reconstructions on millennial time scales can provide important constraints on geodynamo processes in the core. We present new results from the recently published pfm9k family of time-varying geomagnetic field models based on magnetic field directions and intensity stored in archaeological artefacts, ancient lava flows and sediment records. The models predict the presence of 2-3 flux patches in northern hemisphere describing a general westward motion through the greater part of the last 4000 years and intermittent occurrences of reverse flux patches migrating from the equator towards, and possibly into, the tangent cylinder. We explore possible analogies to the present field and the South Atlantic Anomaly and investigate this further using a new compilation of palaeomagnetic data from the SW Pacific. We discuss the physical implications as well as the robustness of these results.